Task: 5337

State of Utah
DEPARTMENT OF NATURAL RESOURCES

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July 1, 2013

Ryan Ellis, P.E.
Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, Colorado 80228

Subject: Second Review of Notice of Intention to Commence Large Mining Operations, Energy Fuels Resources, Daneros Mine, M/037/0126, San Juan County, Utah

Dear Mr. Ellis:

The Division of Oil, Gas and Mining has completed a review of the referenced Notice of Intention to Commence Large Mining Operations which was received March 7, 2013, and revised with a submittal received May 6, 2013. The attached comments will need to be addressed before tentative approval may be granted.

The comments are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Please address only those items requested in the attached technical review by sending replacement pages for the original mining notice using redline and strikeout text. After the notice is determined technically complete, the Division will ask that you submit two clean copies of the complete and corrected plan. Upon final approval, one copy will be stamped "approved" and returned for your records.

The Division will suspend further review of the Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me at 801-538-5261 or Mike Bradley at 801-538-5332. Thank you for your cooperation in completing this permitting action.

Sincerely,

Paul B. Baker
Minerals Program Manager

PBB: mpb: eb
Attachment: Review
cc: Ted McDougall, Monticello BLM (tmcdouga@blm.gov)
P:\GROUPS\MINERALS\WP\M037-SanJuan\M0370126-DanerosLMO\final\Rev2-5337-06282013.doc

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UTAH DNR OIL, GAS & MINING

2nd REVIEW OF NOTICEOF INTENTION
TO COMMENCE LARGE MINING OPERATIONS

Energy Fuels Resources (USA) Inc.
Daneros Mine
M/037/0126
July 1, 2013

General Comments:

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	General	Submittal should be formatted to easily incorporate additional revisions and amendments.		
2	General	The Division may have additional comments based on the response to this review.		

R647-4-101 - Filing Requirements and Review Procedures

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
3	General	Submittals refer to Small Mine permit number S/037/0121. For future reference, use Large Mine project number which has been assigned to this site: M/037/0126.	mpb	

R647-4-105 - Maps, Drawings & Photographs

General Map Comments

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
4	All maps	Finalize revised maps to show new acreages and feature locations as discussed during field survey conducted in June, 2013.	mpb	
5	All maps	Please differentiate between existing and proposed contour lines. The Division suggests using dashed lines for existing contours and continuous lines for proposed contours.	mpb	
6	Attachment F	A revised SWPP will need to be submitted based on the modifications made to the drainage plan for the South Portal Area and recalculations needed for the Bullseye Canyon drainage.	Aaa/ mpb	
7	Attachment H	The SPCC plan might need to be revised based on modifications made for the facilities layout plan in the South Portal Area.	aaa	

105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
8	Figures 13-15	Per R647-4-110.4, the permanent location of deleterious materials needs to be shown on a map. This can be shown either on a separate map or, if reasonable, on Figures 13-15.	pnb	

105.4 - Photographs

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
9	Attachment E; No page numbers	The same photo was used to illustrate Topsoil Sample/Vegetation Survey points DB1 and DA-6. These two points are not at the same location. Please clarify.	mpb	

R647-4-106 - Operation Plan

106.2 - Type of operations conducted, mining method, onsite processing, deleterious materials

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
10	Page 5	This section of rules requires that deleterious or acid-forming materials present or to be left on site be identified. After briefly and generally identifying deleterious materials in this section, it would be appropriate to refer to section 106.4 and Attachment D for more detailed discussions of the identified deleterious materials.	pnb	
11	Page 5	Please provide a revised operations plan as per comment by Frank Filas in email on June 21, 2013.	mpb	

106.3 - Estimated acreages disturbed, reclaimed, annually

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
12	Table 4	Revise estimated acreages based on new proposed plans.	mpb	

106.4 - Nature of materials mined, waste and estimated tonnages

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
13	Pages 8-11	Refer to and discuss the rock characterization data from the 2009 Daneros Environmental Assessment (Appendix J).	pnb	
14	Page 10, para 6	The statement that the acid generating potential of development rock "varies" should be addressed in more detail. Discussion about the site-specific geochemical studies for the development rock mined from other geologic units is missing, based on paragraph 6 of page 9. Since non-Shinarump Member acid-base accounting (ABA) of waste rock has not been provided (and may not be needed), provide clearer justification for the assumption that non-mineralized rock will be non-deleterious, including discussion about the acid-neutralizing and acid-producing potential of decline, development, and vent hole waste rock from non-Shinarump units.	pnb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
15	Page 10, para 8	Based on the findings of Attachment D, nitrates should also be included as reasons for potential deleterious leachate (given enough water). Thallium and antimony should be listed as additional deleterious components associated with theoretical drainage from ore.	pnb	
16	Page 11, para 1	The risk identified in Attachment D to wildlife from contact with copper and zinc should be re-stated here.	pnb	
17	Page 11, para 1-2	Comment on the lack of neutralizing material in the rock samples to date. Refer to the mineralogy information collected and requested to be provided in Appendix D.	pnb	
18	Page 11, para 2	Refer to the BLM's requirement for annual analyses and reporting of the ongoing, quarterly rock characterization (see the BLM's Compliance & Monitoring Requirements for the Plan of Operations in Attachment B of the 2009 & 2011 EAs), and include in the text a commitment to send the Division a copy of the annual report of quarterly waste rock sampling and analyses and any related actions.	pnb	
19	Page 11, para 3-4	Please provide basic information on the gamma radiation survey and methods (equipment type, measurement height, any assumptions, etc).	pnb	
20	Page 11, para 4	Because the southeast portion of the Daneros portal area apparently used (or to be used) for ore storage was apparently not surveyed for gamma radiation, the upper range of measured values may be higher than the stated 370 µR/hr. As needed, correct the text.	pnb	
21	Attach. D, p. 8, para 1	Correct the typo "CsSO4". Since gypsum was referenced, it is assumed CaSO4 is correct.	pnb	
22	Attach. D, page 8, para 2	The text states: "…This sample shows that the underlying non-mineralized Moenkopi Formation…." Since the number of samples of rock from the Moenkopi Formation is not statistically significant, the use of the word "show" is inappropriate in this case. Other uses of the word "show" in this paragraph are acceptable.	pnb	
23	Attach. D, pages 8-9	Correct the inconsistency with how sample D-10 is characterized on page 8 (paragraph 2) and page 9 (paragraph 1).	pnb	
24	Attach. D, pages 8-10	Address how representative the present characterization is of future Shinarump development rock and other rock. Identify the role of quarterly rock characterization (required by the BLM as a condition of the Plan of Operations approval) in characterizing future ore.	pnb	
25	Attach. D, pages 8-9	Discuss the general nature of the Neutralization Potential (NP) of the analyzed samples.	pnb	
26	Attach. D, p. 9, para 4	Correct the references to the table numbers listed, as they are incorrectly referenced.	pnb	
27	Attach. D, page 10	Provide a brief summary of conclusions related to the neutralization potential of the different rock types encountered.	pnb	
28	Attach. D, page 10, para 5	Based on the data and page 9 of the attachment, nitrate/nitrite nitrogen should also be included as reasons for expecting potential deleterious leachate given enough water. Thallium and antimony should be listed as additional deleterious components associated with theoretical drainage from ore.	pnb	
29	Attach. D, p. 10, para 6	The risk identified on page 9 to wildlife from contact with copper and zinc should be re-stated here.	pnb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
30	Attach. D, page 8	Include more summarized information about the SEM-EDS data. Specifically note the presence or lack of mineralogy indicative of neutralization potential.	pnb	
31	Attach. D, page 8	Briefly explain potential reasons for the difference in acid generation potential between the multi-increment samples and the underground samples.	pnb	
32	Attach. D, page 10	To be consistent with the main NOI text, indicate that there will also be an inert rock component of the cover between the soil and the potentially deleterious rock.	pnb	
33	Sec. 110.4, pg. 31	At reclamation, the operator has committed to voluntarily reclaim the development rock areas (DRAs) to a standard radiation dose of 100 mrem or less above background designed for a person camping for 14 days at/near the mine site. However, the Division is concerned about monitoring the DRA and ore stockpiles during operations for both radon and gamma radiation. Will the MSHA-mandated protocol mentioned on pg. 25 cover monitoring of the DRA and ore stockpile areas while the mine is in operation? Or is it designed for monitoring the workers only? The Division would like annual monitoring data for gamma and radon levels at the DRAs and ore stockpiles. This information can be submitted as part of the annual report.	aaa	
34	Attach. D, Table 1	Include the ABA data provided in Appendix J of the 2009 Environmental Assessment. Summarize the conclusions in Attachment D.	pnb	
35	Attach. D, Table 1	Unless a valid reason exists to retain the current name, the column identified as "Acid/Base Potential" should be renamed "Net Neutralization Potential."	pnb	
36	Attach. D, Table 2	Some numbers on this table should not be colored (e.g. multiple analytes in the "Average Ore" and "Daneros Ore Pile" columns). Check and correct as needed.	pnb	
37	Attach. D, Omission	Provide a map showing the locations for the underground samples, multi-increment waste and ore pile samples (including the decision unit area boundaries), and the composited ore and low-grade ore samples. Also include the location of samples provided as part of the previous large mine Notice of Intention submittal.	pnb	
38	Attach. D, Omission	Provide copies of the laboratory's results for each of the following tests for each of the analyzed samples (including the original analyses provided as part of the 2009 Daneros Environmental Assessment for the BLM): 1) ABA data, 2) MWMP and SPLP tests, 3) chemical analyses, and 4) SEM-EDS analyses.	pnb	

106.5 - Existing soil types, location, amount

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
39	Drainage Report	Runoff calculations assumed Hydrologic Soil Group (HSG) 'A' throughout. NRCS soils data defines the watershed of Bullseye Canyon upstream of southern-most 48" culvert locations as ~55% of area HSG 'B' and ~45% HSG 'D.' This will impact runoff calculations, particularly with regards to culvert sizing that will need to convey runoff from the entire upstream portion of the Bullseye Canyon watershed through the site. Revise runoff calculations for all sites to use NRCS HSGs. (HSG data can be obtained from NRCS Web Soil Survey using Soil Data Explorer/Soil Properties and Qualities/ Soil Qualities and Features tabs, then select Hydrologic Soil Groups).	mpb	

106.7 - Existing vegetation - species and amount

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
40	Section 106.7 & Attachment E	Vegetation report does not indicate species present on site. Document the species encountered and percent cover as requested by the BLM.	mpb	

106.8 - Depth to groundwater, extent of overburden, geology

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
41	106.8 pg. 15	Please verify whether or not the Bullseye well has a water right associated with it. No information could be found specific to the Bullseye well. How far will the portals from the Bullseye area extend relative to the location of this well? Evaluate impacts and address potential impacts in Section 109.1. The Division performed a water rights search and found several records of surface and groundwater water rights in the area. Please analyze whether or not these water rights in the area are valid/accurate and whether any proposed mining activities have the potential to impact them.	aaa	

106.9 - Location & size of ore, waste, tailings, ponds

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
42	Table 5	Adjust table to show revised Development Rock Storage Capacities	mpb	

R647-4-108 - Hole Plugging Requirements

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
43	Pg 18	Move description of vent hole (shaft) reclamation to section 110.2 – "Roads, highwalls, slopes, impoundments, drainages, pits/ponds, shafts/adits, etc., reclaimed."	Pnb/ mpb	

R647-4-109 - Impact Assessment

109.1 - Impacts to surface & groundwater systems

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
44	Page 19	State why acid-forming and other deleterious waste rock or ore are unlikely to affect surface and ground waters.	pnb	

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
45	Attachment C, Exhibits A, A1 & B	Drawings show three 48-inch culverts at proposed stream crossings. Stream Alteration Permit 10-99-01SA filed with the Utah Division of Water Rights was granted with the design stating that three 60-inch culverts would be used for construction of the crossing at the Daneros portal area. Field survey confirms 60-inch culverts were used. The Daneros portal crossing is upstream of the Bullseye portal area; proposed crossings downstream of the Daneros portal crossing will need to be sized to convey similar, if not larger flow rates, and culverts should be sized accordingly.	mpb	
46	Attachment C, Exhibit B	The Stream Alteration Permit mentioned above only addresses the crossing at the Daneros portal area. Stream Alteration Permits will be needed for the two additional crossings at the Bullseye portal area shown on Exhibit B.	mpb	
47	Pg 19	Describe how any vent shaft(s) avoid or have no affect on the perched aquifer identified in this section. Uncased vent shafts should be backfilled so that any water-bearing zones are protected. Material considered to be deleterious should not be used to backfill the vent shafts that may affect water bearing zones. Please identify the vent hole diameter.	mpb/ pnb	

109.4 - Slope stability, erosion control, air quality, safety

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
48	Attachment C, Exhibits B & C and supporting calculations	Watershed boundaries are poorly defined on Exhibits B and C in Attachment C, and undefined for the culvert sizing calculations. Designs should extend watershed boundary lines perpendicular to elevation contours from the beginning and end points of diversion ditches. Culvert sizing calculations for stream crossings need to address the entire upstream area of Bullseye Canyon (about 3.5 square miles) since the culverts will be required to convey cumulative runoff from that area. Revise calculations to use NRCS HSGs and accurate watershed boundaries to verify proper culvert sizing.	mpb	
49	Fig.1 (draft email submission 6.21.2013)	This figure shows a sediment pond between the topsoil stockpile and the berm. Is the pond necessary? Could the berm east of the topsoil pile handle the drainage?	aaa	

109.5 - Actions to mitigate any impacts

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
50	106.8 pg. 15	Bullseye Spring was identified as groundwater resource in the area located approximately 160 feet above the ore body in a perched aquifer system. It cannot be ruled out that this spring will not be affected by the impacts from mining based on its proximity to the portals. Please better characterize this spring by confirming its location and any seasonal variability. The Division recommends at least one year of quarterly monitoring of this spring to include flow data and field parameters, i.e. specific conductivity, pH, temperature.	aaa	

R647-4-110 - Reclamation Plan

110.2 - Roads, highwalls, slopes, impoundments, drainages, pits/ponds, shafts/adits, etc., reclaimed

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
51	Figure 13	Figure does not indicate that three 60-inch culverts will be removed. Revise to show removal of culverts and re-establishment of natural drainage channel.	mpb	

110.3 - Description of facilities to be left (post mining use)

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
52	Figure 13	Clarify the Daneros Portal Area. Diversion 1 is to remain but Diversion 2 was omitted. Presumably, this is because it will be removed. For clarity, please add Diversion 2 and label it as "to be reclaimed". Please also add culverts and state "remove culvert" similar to what is shown in Figure 14.	aaa	

110.4 - Description or treatment/disposition of deleterious or acid forming material

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
53	Page 30, para 2	Since Blanding is located about 40 miles east of the mine and slightly lower in elevation, it is not accurate to identify both meteorological information and tested materials from the mine as being "site-specific." Include the source for precipitation and evaporation data, acknowledge the distance between the mine and Blanding, and justify the use of the Blanding data. Justification may be included in Attachment J.	pnb	
54	Page 31, para 2	Please refer to Section 110.5 for cover information.	pnb	
55	Page 31, para 2	Indicate that the non-mineralized material to be used as inert cover for potentially deleterious rock will be non-deleterious.	pnb	
56	Page 31, para 3-4	Either here or in 106.4, provide estimates of: 1) the maximum amount of ore and low-grade ore to be stored at the mine at any one time, 2) the maximum amount of development rock to be generated from the Shinarump Member that is likely to be placed at the surface, and 3) the amount of non-deleterious/inert rock to be stored at the surface (such as non-deleterious rock from past or future declines and vent shafts). These amounts should confirm that sufficient inert material will be present to cover the maximum amount of deleterious rock planned to be left at the surface, per 110.4, and should be consistent with the dimensions of the storage areas on the maps.	pnb	
57	Page 31	Provide a commitment to apply the Rock Management Plan for any acid-forming or otherwise deleterious rock that might not originate from the Shinarump Member.	pnb	

110.5 - Revegetation planting program

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
58	Page 31, para 8	The text here states: "As discussed above, an average of six inches of topsoil will be placed over the mine site except for the DRA's…." Include a reference to a prior section of the document, and correct the inconsistency in the reported topsoil cover depths. Section 110.2 (page 28, Development Rock Area Reclamation) states the depth will be maximized rather than specifying an average soil cover depth.	pnb	
59	Page 38	If using broadcast seeding, it is recommended that a flex or drag harrow, or similar method, be used to lightly cover the seed with topsoil after broadcasting. If using drill seeding, this will not be necessary.	mpb	
60	Page 38	The Division recommends including a commitment to use certified or source-identified seed.	mpb	